

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

NCS MULTISTAGE INC.,

Plaintiff,

v.

NINE ENERGY SERVICE, INC.,

Defendant.

CIVIL ACTION NO. 6:20-CV-00277-ADA

JURY TRIAL DEMANDED

**DEFENDANT NINE ENERGY SERVICE, INC.'S
RESPONSIVE CLAIM CONSTRUCTION BRIEF**

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I. INTRODUCTION AND SUMMARY OF ARGUMENTS

In Defendant Nine Energy, Inc.’s (“Nine”) opening claim construction brief, Nine demonstrated that many of the terms are indefinite, and that the well-established principles of claim construction lead to the constructions proposed by Nine. Unable to respond directly, Plaintiff NCS Multistage Inc. (“NCS”) instead offers the Court a variety of baseless and indefensible approaches to claim construction in an effort to save its case, relying heavily on expert testimony to recast or redraft its claims. But NCS’s expert takes positions inconsistent with basic patent law. For example, he alleges that a single term “internal diameter” should mean two different things in the same claim. *See infra*, at Section II.A. Similarly, he asks the court to construe a “rupturing force” to sometimes mean a hydraulic pressure (*infra*, at Section II.E), but other times means either a hydraulic pressure or an impact force (*infra*, at Section II.F). Further, he admits that his construction of “attached” finds its grounding not in intrinsic or extrinsic evidence, but merely from this dispute between the parties. *Infra*, at Section II.B.2.

But the Court need not accept NCS’s expert’s testimony, as his limited experience in the field of well construction or casing flotation provides little foundation for it. He has no formal training in petroleum engineering (Ex. 3 (“Rodgers Dep.”), at 17:15-17), has never worked on or with flotation plugs (*Id.*, at 22:17-20), with any other downhole tool intended for flotation in horizontal wellbores (*Id.*, at 22:18-21), or with any device with a rupture disc intended for blocking the flow of drilling fluid through a downhole tool (*Id.*, at 41:1-4). Indeed, he may not even qualify as a person having ordinary skill in the art (“POSA”) of the ’445 Patent.

In contrast, for the reasons in Nine’s opening brief, and those that follow, Nine has proposed reasonable constructions grounded in the language of the claims, as informed by the perspective of a POSA, in view of the specification, and should therefore be adopted by the Court.

II. DISPUTED CLAIM TERMS

A. “internal diameter” (Claims 1, 22, 28, and 50)

Defendant Nine’s Construction	Plaintiff NCS’s Construction
the diameter of a fluid channel measured perpendicularly from the inner wall of the fluid channel through the center of the casing string, to the opposite inner wall	No construction

NCS’s proposal not to construe “internal diameter” must be rejected. It is irreconcilable with its expert’s testimony that the term has two meanings, even within the same claim. Ex. 3, at 67:3-9. While absent from its construction, NCS takes the untenable position that “internal diameter” usually refers to a diameter (the “Diameter Definition”), but that it “can” mean a sidewall in the petroleum industry (the “Sidewall Definition”), but only sometimes, and that it need not be construed because a POSA would be able to decipher when the two meanings should be used. NCS Opening Brief (“NCS Br.”) (Dkt. 41), at 4-5. But even if that were viable logic, which it is not, it fails as a matter of law. Constructions are not for POSAs, they are for lay juries, and claiming that a POSA could tell the difference provides no clear guidance to the jury. *See AFG Indust., Inc. v. Cardinal IG Co., Inc.*, 239 F.3d 1239, 1247 (Fed. Cir. 2001) (“claim construction becomes the basis of jury instructions”); *Control Res. v. Delta Elecs.*, 133 F. Supp. 2d 121, 127 (D. Mass 2001) (“claim construction must result in a phraseology that can be taught to a jury of lay people. It is not enough simply to construe the claims so that one skilled in the art will have a definitive meaning.”). To the extent that NCS believes there is an industry-specific definition of “internal diameter,” it should clearly identify it, support it with extrinsic evidence, and incorporate it into a proposed construction.

Even still, NCS is wrong. NCS has not and cannot show that the Sidewall Definition is a “well-established meaning in the relevant industry,” as required to depart from the plain and

ordinary meaning of the term. *Azure Networks, LLC v. CSR P.L.C.*, 771 F.3d 1336, 1347-48 (Fed. Cir. 2014), *rev'd on other grounds*, 575 U.S. 959 (2015). NCS has presented neither technical dictionaries nor trade publications that identify this Sidewall Definition, nor can NCS's expert think of any. Ex. 3, at 67:18-68:10. In contrast, Nine's expert conducted an informal survey of the petroleum engineering literature to identify whether the term "internal diameter" or its synonyms are used to refer to a sidewall, and found little evidence to support the Sidewall Definition. Ex. 1, at ¶¶16-18. In 49 of 50 papers reviewed, the term "internal diameter" or "inside diameter" clearly referred to the Diameter Definition. *Id.* In only one paper was the term "inside diameter" used in a manner that could be understood according to the Sidewall Definition. *Id.*

Even if both the Diameter Definition and the Sidewall Definition were recognizable to a POSA, NCS and its expert cannot themselves agree on when those dueling definitions are used, calling into question whether a POSA really could tell the difference. NCS's brief alleges that the term "internal diameter" refers to a sidewall at numerous points in the specification, including at 1:47-49, 2:40-44, and 7:3-10. NCS Br., at 5. But its expert testified that either the Diameter Definition or the Sidewall Definition work equally as well in 1:47-49 (Ex. 3, at 44:7-46:6) and in 2:40-44 (Ex. 3, at 46:17-47:4), and that *only* the Diameter Definition is used at 7:3-10 (Ex. 3, at 48:24-49:8). NCS's expert himself cannot consistently identify where the Sidewall Definition or the Diameter Definition is used. In his declaration, he claims that standard industry casing specifications support a Sidewall Definition (NCS Br., Ex. 1 ("Rodgers Dec."), at ¶42), but he later testified that *the same document* clearly uses the Diameter Definition (Ex. 3, at 61:16-64:5). Far more troublesome, Dr. Rodgers testified that the Diameter Definition and the Sidewall Definition are *both* present in the claims of the '445 Patent. Ex. 3, at 67:3-9. Simply put, NCS's position is deeply confusing, and would prove indecipherable to a jury.

Nine's Responsive Brief on Claim Construction

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NCS's proposal not to construe this term is a proposal to cast the jury adrift. But the jury need not be lost at sea. An internal diameter simply refers to a measured diameter, and Nine's construction clearly explains that for the jury. *See Nine Opening Brief ("Nine Br.") (Dkt. 42), at 5-7.*

B. "the region of the tubular member where the rupture disc is attached has a larger internal diameter than the internal diameter of the casing string and is parallel to the internal diameter of the casing string" (Claims 1, 22, 28, and 50)

Defendant Nine's Construction	Plaintiff NCS's Construction
Term is indefinite under 35 U.S.C. § 112 Proposed Alternative – a flat surface of the tubular member where the rupture disc is fastened, affixed, joined, or connected to the tubular member is circular and has a diameter larger than the internal diameter of the casing string, and defines a plane that is parallel to a plane defined by the set of internal diameters at a location in the casing string	In the region of the tubular member, the rupture disc is directly secured to and in sealing engagement with a cylindrical surface that is wider than and parallel to the inner surface of the casing string

NCS's proposed construction attempts to re-write this limitation in a misguided effort to support its infringement theory, but it arises purely from NCS's imagination, and not from principles of claim construction. As shown below, NCS's proposed construction should be rejected, and the limitation found to be indefinite. To the extent the Court does not find this term indefinite, Nine submits that its proposed alternative construction makes better sense of this term in view of the intrinsic evidence, and should be adopted over NCS's proposed construction.

1. This Limitation Is Indefinite

Even under NCS's understanding of this term, it is indefinite because that understanding requires that claim terms change meaning even within this single limitation. NCS's expert was clear that the phrase "the internal diameter of the casing string" *must* have multiple meanings

within the claim for the claim to make sense. Ex. 3, at 67:3-9. But the phrase “the internal diameter of the casing string” appears twice in this limitation, and finds its antecedent basis in the preamble, which recites “the casing string having an internal diameter.” As all three phrases refer to the same feature, it makes no sense for these phrases to change meanings. *See Epcon Gas Sys., Inc. v. Bauer Compressors, Inc.*, 279 F.3d 1022, 1030-31 (Fed. Cir. 2002) (“‘a word or phrase *used consistently* throughout a claim should be *interpreted consistently*’” (alteration in original) (quoting *Phonometrics, Inc. v. N. Telecom, Inc.*, 133 F.3d 1459, 1466 (Fed. Cir. 1998))).

But NCS’s expert testified that the first use of “the internal diameter of the casing string,” *must* refer to the diameter of the casing string, because it is compared to the size of the internal diameter of the casing string. Ex. 3, at 58:3-8. In contrast, the second use of “the internal diameter of the casing string” *must* refer to the sidewall. *Id.*, at 60:6-21. NCS’s expert repeatedly testified that the first use refers to the Diameter Definition. *Id.*, at 58:3-8, 145:21-146:8; 147:24-148:6. Further, NCS’s expert believed “it doesn’t make any sense” to apply the Diameter Definition to the second use of the phrase “the internal diameter of the casing string.” *Id.*, at 148:16-23. Perhaps the more logical explanation is that, even if the term “internal diameter” has multiple definitions, this limitation is indefinite because there is no consistent meaning of the phrase “the internal diameter of the casing string” that makes this claim understandable. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357 (Fed. Cir. 1999) (the same terms in the same claim must be given the same definition even if it results in a nonsensical interpretation of the claim that renders the claim inoperable, and thus invalid)¹

¹ To the extent that NCS relies on pre-*Nautilus I* caselaw that permits varying interpretations of terms to preserve validity under the “insolubly ambiguous” or “amenable to construction” standards expressly rejected by the Supreme Court in *Nautilus I*, 572 U.S. at 910, such authority should be disregarded. *See, e.g., Microprocessor Enhancement Corp. v. Texas Instruments, Inc.*,

But NCS’s expert is wrong. A POSA would not presume that an “internal diameter” can refer to a sidewall. *See supra*, at Section II.A. Further, as presented in the paragraphs that follow, this limitation is amenable to construction, in the alternative, only if “internal diameter” consistently refers to a diameter throughout. But that is not the standard for definiteness. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014) (“*Nautilus I*”) (a POSA must understand the claims with “reasonable certainty”). While Nine respectfully submits that its proposed construction is more consistent with the intrinsic evidence, neither construction offered by the parties flows naturally and simply from the claim language, and thus a POSA cannot know with “reasonable certainty” what is meant by the claims.

Nonetheless, the Court need not fully agree with Nine. To the extent that the evidence between Nine and NCS’s constructions appear inconclusive, the Court need not pick one or the other. Such an indeterminate record has a single clear conclusion – that the term is indefinite.

2. NCS’s Proposed Construction Ignores the Claim Language

NCS’s flawed analysis is laid bare in that its argument begins not with the claim language, but with a discussion of “an important aspect of the invention,” and then moves immediately to the specification and prosecution history. NCS Br., at 10. But it is the *claims*, and not the specification or prosecution history, that define the scope of the patent. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (“[t]he written description part of the specification does not delimit the right to exclude. That is the function and purpose of the claims.”) (quoting *Markman v. Westview Instr., Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995))). NCS’s failure to grapple with the claim language is a tacit admission of its indefiniteness.

520 F.3d 1367, 1376 (Fed. Cir. 2008) (“we note that a claim that is amenable to construction is not invalid on the ground of indefiniteness” (citation and internal quotations omitted)).

Rather than analyze the claim language, NCS attempts to redraft that language by substituting the term “attached” with “directly secured to and in sealing engagement with.” As admitted by its own expert, this construction does not flow from the claims, or even the specification, but solely because the parties dispute the meaning of the term. Ex. 3, at 138:19-139:9. Indeed, NCS’s expert brought NCS’s infringement contentions and Nine’s engineering drawings describing the accused device to his deposition, suggesting that infringement considerations, and not intrinsic evidence, guided that conclusion. Ex. 3, at 11:5-20; *NeoMagic Corp. v. Trident Microsystems, Inc.*, 287 F.3d 1062, 1074 (Fed. Cir. 2002) (“It is well settled that claims may not be construed by reference to the accused device.”). Nor has NCS provided any argument that the patentee had redefined the term “attached” to refer to anything other than its plain and ordinary meaning. *GE Lighting Solutions, LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014) (either lexicography or disavowal is necessary to depart from the ordinary meaning of a claim term). Accordingly, “attached” should carry its plain and ordinary meaning – “fastened, affixed, joined, or connected to.” Nine Br., Ex. 6, at 80.

NCS also fails to analyze the claim language because doing so would expose the inconsistency with which they construe the term “internal diameter,” as discussed *supra*, at Section II.A. Further, nothing in the claims even suggest a Sidewall Definition of “internal diameter.” Even in the preamble, the claim recites “the casing string having an internal diameter that defines a fluid passageway,” which refers to the Diameter Definition. As admitted by NCS’s expert, internal diameters frequently define the fluid passageway through casing strings, including in standard industry listings of casing dimensions. Ex. 3, at 61:16-64:5. Put another way, this use in the preamble is fully consistent with the Diameter Definition, and does not presuppose any other definition. Ex. 1, at ¶19.

3. NCS's Proposed Construction Is Geometrically Impossible

Core to the parties dispute is the limitation that the Attachment Region is “parallel to the internal diameter of the casing string.” Nine Br., at 12-16 (defining “Attachment Region” as “the region of the tubular member where the rupture disc is fastened, affixed, joined, or connected”); NCS Br., at 10-15. This limitation has no textual support in the specification, which *never* uses the term “parallel.” Ex. 3, at 149:24-150:7; Ex. 1, at ¶35. Even the amendment that added this limitation cited only Figure 2 for support. Nine Br., Ex. 4, at 11. Thus, a POSA must guess at what is meant by this limitation. Ex. 1, at ¶36.

Nine’s analysis begins with the most clearly identifiable term – the “internal diameter of the casing string” – converts it to a geometric feature against which another feature could be considered “parallel” (a plane defined by the set of measured internal diameters at a location in the casing string or an “Internal Diameter Plane”), and then looks for an Attachment Region that is parallel. Such a feature is identifiable in Figure 2, a point acknowledged by NCS’s expert, as the circumferential aperture 39 of the shear ring on which the rupture disc sits. *See* Ex. 3, at 158:16-160:19; Ex. 4, Figure 2 (Dr. Rodger’s annotation of Figure 2 from the ’445 Patent). While plain in 2-dimensions, Nine’s construction merely translates that internal diameter from a cross-section into a three-dimensional feature – the Internal Diameter Plane, which is expressly recited in Nine’s proposed alternative construction. Nine Br., Ex. 1, at ¶¶95-97.

NCS’s flawed analysis starts with the Attachment Region, which NCS appears to assume is the same region referred to in the phrase “in sealing engagement with a region of the tubular member” (the “Sealing Region”). But each phrase refers to “a region,” rather than referring back to “the region.” In such a situation, canons of claim construction do not presuppose a form of non-literal antecedent basis, but instead presume that different terms in a claim have different meanings.

Chicago Bd. Options Exchange, Inc. v. Int'l Securities Exch. LLC, 677 F.3d 1361, 1369 (Fed. Cir. 2012). Indeed, a POSA reading the '445 Patent could reasonably assume that the Attachment Region was not the same region of the tubular member “in sealing engagement with” the rupture disc. The '445 Patent repeatedly describes that the rupture disc is “seated” on the “tabs” of the “shear ring.” Nine Br., Ex. 2, at 8:48-50; 9:39-42; 9:67; 10:22-24; 10:41-43. This feature is core to the '445 Patent, which describes that fluid pressure “on a securing mechanism hold[s] the rupture disc in place,” and the alleged inventive feature of the '445 Patent is the fact that this attachment can be released. Nine Br., Ex. 2, at 6:29-30, 9:63-10:6. The example securing mechanism is the shear tabs of the shear ring. *Id.*, at 9:67.

Even if NCS was correct that the Attachment Region and the Sealing Region refer to the same feature, its proposed construction is still flawed. If NCS is correct that a sidewall is a possible meaning of “internal diameter,” a POSA must still make geometric inferences to arrive at features that could be described as “parallel.” Ex. 1, ¶¶36-37. Put another way, it is not enough for NCS to identify two parallel lines depicting sidewalls in a cross-section, such as Figure 2, because those lines depict a three-dimensional object in any real-world embodiment. Ex. 1, ¶¶36-37. Instead, NCS must first show that the sidewalls are cylinders, and that those cylinders have axes, and that those axes are parallel. Ex. 1, ¶¶36-37. Only through this flawed analysis can NCS arrive at the portion of the construction which requires “a cylindrical surface that is . . . parallel to the inner surface of the casing string.” Accordingly, it should be rejected.

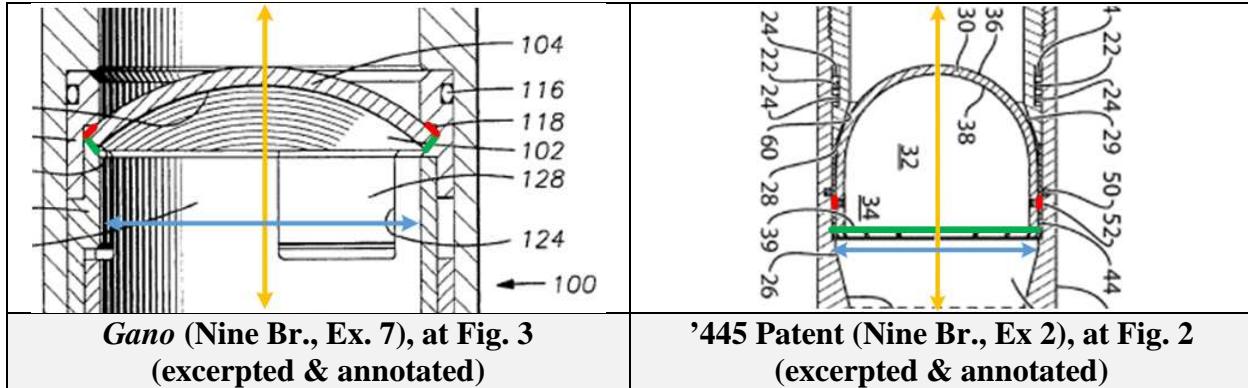
4. NCS's Proposed Construction Improperly Renders One Instance of “Internal Diameter” Mere Surplusage

NCS’s analysis is further flawed, because under this understanding of the claim language, the second occurrence of the phrase “the internal diameter of the casing string” is mere surplusage, suggesting an erroneous construction. *See Nautilus Grp., Inc. v. Icon Health & Fitness, Inc.*, 82

Fed. Appx. 691, 694 (Fed. Cir. 2003) (*Nautilus II*). As NCS's expert explained, its proposed construction would also apply to a limitation that wholly omitted the term "internal diameter" and merely claimed that "the region where the rupture disc is attached . . . is parallel to the casing string." Ex. 3, at 167:22-168:24. The canon against surplusage applies with special force here, where it would mean that the first occurrence of the term "internal diameter of the casing string" is not surplusage, but the second occurrence is. This is an unreasonable reading of the claims that should be rejected. *Nautilus II*, 82 Fed. Appx. at 694 (finding error in district court's claim construction that rendered certain terms as "surplusage.").

5. The Prosecution History Supports Nine's Alternative Construction, Not NCS's

The Response to Notice of Non-Compliance, cited by both parties in support of its constructions, supports *only* Nine's proposed alternative construction. Nine Br., at 16; NCS Br., at 12-14. Figure 3 of *Gano* illustrates a cross-section of a tool where both the surfaces where an O-ring 118 seals the plug 102 against the sidewalls of the tool (depicted in **red**), and where the plug 102 rests on inwardly facing upper arcuate shoulders 126 (depicted in **green**) are both sloped relative to both the central axis of the tool, and its internal diameter. *See* Nine Br., Ex. 7, at 8:28-46. In Figure 2 of the '445 Patent, rupture disc 30 is sealed to shear ring 44 by O-ring 52 (depicted in **red**), yet the rupture disc 30 is supported and constrained from vertical motion by the circumferential aperture 39 of shear ring 44 (depicted in **green**). In both diagrams, the direction of the internal diameter is labeled in **blue**, and the central axis of the pipe is labeled in **yellow**:



Applicant accurately describes both of these areas in describing that “Gano’s plug 70 and rupture disc 102 are in **sealing engagement with** and **attached to** a region of the tubular member that is not parallel to the internal diameter, but is instead sloped.” Nine Br., Ex. 4, at 12. (emphasis added). But applicant did not choose to incorporate both distinctions into the claims, and instead *solely* distinguished *Gano* on the basis of “the region where the rupture disc **is attached.**” *Id.* Accordingly, applicant amended the claim to recite that the **Attachment Region** is “parallel to the **internal diameter** of the casing string.” *Id.* at 2, 12. As shown in Figure 2 of the ’445 Patent, that feature is present where the rupture disc is seated in circumferential aperture 39 of shear ring 44, depicted in **green**, and which is illustrated as “parallel to the **internal diameter** of the casing string” when shown in cross section. When the cross-sectional drawing is embodied in a three-dimensional embodiment, the equivalent to the **internal diameter** above is the Internal Diameter Plane incorporated into Nine’s proposed alternative construction. *See* Nine Br., at 13-17.

6. NCS’s Objections to Nine’s Alternative Construction Are Meritless

NCS alleges three errors in Nine’s proposed alternative construction, all of which are meritless. First, Nine’s alternative construction requires that the Attachment Region be a “flat surface” because it needs to be parallel to an Internal Diameter Plane, which is flat, and because it corresponds to the circumferential aperture 39 of shear ring 44, which is also flat. And while NCS is correct that the term “flat” does not appear in the ’445 Patent, neither does the term “parallel,”

much less in describing cylindrical surfaces. *Cf.* NCS Br., at 14.

Second, NCS alleges Nine's construction is erroneous because the specification does not describe that the Attachment Region of the disc is "fastened, affixed, joined, or connected to" any surface. *Id.* But that phrase flows from the plain and ordinary meaning of the term "attached," which appears in the claim language. Nine does not dispute that the rupture disc is not disclosed as being "attached" to any surface, which suggests that the term is both indefinite and not supported by the specification. But further, the rupture disc 30 is also not disclosed as either secured to or in sealing engagement with any part of the "tubular member."

Third, NCS alleges that Nine's Internal Diameter Plane is somehow confusing. NCS Br., at 14-15. But the Internal Diameter Plane is merely a translation into three dimensions of a an internal diameter drawn on a two-dimensional cross section drawing, such as the circumferential aperture 39 of shear ring 44 in Figure 2 of the '445 Patent. *See* Nine Br., at 13-16.

C. "tubular member" (Claims 1, 22, 28, and 50)

Defendant Nine's Construction	Plaintiff NCS's Construction
An upper tubular member, and a lower tubular member coupled with the upper tubular member.	No construction.

Nine's construction incorporates the clearly implied definition of the term "tubular member," as identified by NCS's own expert. Ex. 3, at 76:1-77:12. At his deposition, he was asked to look for any definition of the term "tubular member." *Id.* at 76:7-17. When asked to identify the use of the term "tubular member" in the specification, he identified 7:31-38 as such a definition, which reads:

The rupture disc assembly 10 may consist of an upper tubular member 16 defining an upper fluid passageway 12 through its interior, coupled to a lower tubular member 18 defining a lower fluid passage way through its interior, and a rupture

disc 30 sealingly engaged between upper tubular member 16 and lower tubular member 18.

Nine Br., Ex. 2, at 7:31-38; Ex. 3, at 76:20-77:3. This experiment confirms that NCS's own expert would readily identify Nine's proposed construction as the "tubular member" referred to in the claims. Further, the passage identified by Dr. Rodgers is substantially the same as the '445 Patent, at 2:49-54, which forms the basis of Nine's proposed construction. *See* Nine Br., at 7-8. NCS's expert further confirmed that there were no embodiments in the '445 Patent that disclose a float tool that does not have an upper and lower tubular member. Ex. 3, at 79:2-81:25. Accordingly, Nine's proposed construction should be adopted.

NCS's arguments regarding the term "tubular member" should be disregarded as plainly inconsistent with the specification. NCS alleges that the '445 Patent discloses embodiments with "one or more tubulars," thereby indicating that a single "tubular member" could be used. NCS Br., at 5 (citing NCS Br., Ex. A, at 6:66-7:3, 7:17-21). But the cited sections do not refer to the claimed "float tool," but to tubulars that make up a "casing string," making the section irrelevant to the understanding of the term "tubular member." *See* Ex. 3, at 73:11-74:8. Thus, NCS's proposal not to construe the term "tubular member" should be rejected.

D. "sealing engagement" (Claims 1, 22, 28, 50, and 55)

Defendant Nine's Construction	Plaintiff NCS's Construction
attached or secured to create a fluid-tight seal	a substantially fluid-tight seal

NCS's proposed construction should be rejected because it renders the term "engagement" mere surplusage, and imports a concept of "substantial" fluid tightness that does not appear in the claims or the specification. *Nautilus II*, 82 Fed. Appx. at 694.

First, NCS's proposed construction fails to incorporate any concept of "engagement." Instead, "engagement" has an ordinary meaning that requires being "attached" or "secured." *See*

Ex. 3, at 83:4-84:1. Nine’s proposed construction gives effect to the word “engagement” in the claim term. Nonetheless, such an understanding does not prohibit two components that are in “sealing engagement” from moving relative to one another. Ex. 3, at 84:22-85:2. For example, a piston moving in a bore remains in sealing engagement with the bore throughout its motion. Rodgers Dec., at ¶37.

Second, the term “substantially” finds no support in the claims or specification of the ’445 Patent, as admitted by NCS’s expert. Ex. 3, at 90:21-91:13. Instead, the term is imported by NCS into the claim because a POSA allegedly understands that seals are not perfect. NCS Br., at 6. But a POSA also recognizes that an imperfect seal is thus not “fluid-tight.” Ex. 1, at ¶24. It is improper as a matter of law to import into the claims additional limitations drawn solely from the knowledge of a POSA, and NCS has not argued that a POSA would understand the term “sealing” or “sealing engagement” to expressly include substantially fluid-tight seals. Instead, to the extent that NCS believes that a substantially fluid-tight seal performs the same function, in the same way, to obtain the same result as a “fluid-tight seal,” it would need to allege infringement under the Doctrine of Equivalents, which it has failed to do.

E. “the rupture disc is . . . configured to rupture when exposed to a rupturing force greater than the rupture burst pressure” (Claims 1, 22, 29, and 56)

Defendant Nine’s Construction	Plaintiff NCS’s Construction
Term is indefinite under 35 U.S.C. § 112 Proposed Alternative – the rupture disc will rupture when exposed to a rupturing hydraulic pressure greater than the rupture burst pressure	the rupture disc can rupture if exposed to hydraulic pressure that is higher than its rupture burst pressure

NCS’s proposed construction should be rejected, because it requires that the term

“rupturing force” have different meanings in different terms, violating the general principle that identical terms should generally be given a single meaning. *See Epcon*, 279 F.3d at 1030-31 (“a word or phrase *used consistently* throughout a claim should be *interpreted consistently*” (alteration in original) (quoting *Phonometrics*, 133 F.3d at 1456)). While NCS argues that the term “rupturing force” includes impact forces, it now wholly omits them from its proposed construction.

Further, to the extent that “rupturing force” is construed to include impact forces, an impact force cannot be compared to a rupture burst pressure. Ex. 1, at ¶31. The “rupture burst pressure” is a rating of a rupture disc and is a fixed value referring to a constant gauge pressure across the entire rupture disc. *Id.* A POSA would not know how to convert an “impact force” into a figure that can be compared to the rupture burst pressure, because such an “impact force” may be distributed over a smaller part of the rupture disc, or combined with a gauge pressure across the rupture disc. *Id.* Even though a pressure may be convertible to a force, converting the rupture burst pressure of a rupture disc to a rupture force would provide a POSA no meaningful information about when the rupture disc would fail relative to an impact force. *Id.*

NCS’s expert admitted as much. After describing a potential experiment to measure impact forces, he concluded that “a measure of rupture burst pressure would only tell me if it’s going to fail . . . by pressure alone. **It’s not going to tell me anything about whether it would fail by contact forces.**” Ex. 3, at 97:11-98:9 (emphasis added). Put another way, if rupturing force includes impact forces, a POSA would be left to guess how to compare that impact force to the rupture burst pressure of a rupture disc. Therefore, this limitation is invalid.

F. “rupturing force” (Claims 1, 22, 27, 29, 56, and 57)

Defendant Nine’s Construction	Plaintiff NCS’s Construction
Term is indefinite under 35 U.S.C. § 112	a hydraulic pressure or impact force sufficient to rupture the rupture disc

Defendant Nine's Construction	Plaintiff NCS's Construction
Proposed Alternative – rupturing hydraulic pressure	

This claim term is indefinite, for the reasons discussed in Section II.E above, and for the reasons provided in Nine's Opening Brief. *See* Nine Br., at 9-11. NCS's proposed construction should be rejected, as it finds no support in the claims or specification, and conflicts with NCS's proposed construction of another term that uses the term "rupturing force." Simply put, the term "rupturing force" is used a single time in the specification, and there, only describes "hydraulic pressure" as a possible rupturing force. Nine Br., Ex. 2, at 2:1-8.

Further, an "impact force," is never described as a "rupturing force" in the specification. The relevant section of the specification states that a rupture disc "can be ruptured by engagement with an impact surface of a tubular once a rupturing force is applied to the disc, such as by hydraulic fluid under pressure." *Id.* 2:6-8. In this sole example of a "rupturing force" in the specification, the "rupturing force" is identified as hydraulic pressure, which causes an impact on a surface which causes the rupture disc to fail. Put another way, hydraulic pressure and impact forces are not alternatives, but two very different parts of a multi-step process. The term "rupturing force" thus identifies the cause, the only example of which is "hydraulic pressure."

This understanding does not "read out" any embodiments of the '445 Patent, as NCS claims (NCS Br., at 8), but rather identifies that the "rupturing force" is a rupturing hydraulic pressure. This is present in all embodiments of the '445 Patent, all of which initiate the failure process through the application of a rupturing hydraulic pressure – including embodiments where the rupture disc ultimately fails as a result impact on a surface.

Instead, NCS's position *reads in* to the term "rupturing force" the multi-step process that

involves the rupture disc impacting a surface. That is, a POSA reading the claims will not presume from the term “rupturing force” that what is intended is a two-step process that involves first a rupturing force, and then an impact on a surface, but merely that a force is initially applied that will result in a failure of the rupture disc – no matter the mechanism or process of such failure.

Further, NCS’s position here is inconsistent with the construction of the term discussed in Section II.E above. There, NCS wholly omits “impact force” from its construction of the subsequent term that includes the term “rupturing force.” Nine anticipates that NCS will argue that the term “rupturing force” as used in claims 27 and 57 can refer to an impact force because it is not expressly compared to a rupture burst pressure, but not in Claims 1, 22, 29, and 56, because it is compared to a rupture burst pressure. But NCS expressly identified the term “rupturing force” for construction as present in claims 1, 22, 29, and 56. NCS is asking the Court to give the exact same claim term multiple meanings, absent clear support for such meanings. Such an argument should be rejected. *In re Varma*, 816 F.3d 1352, 1363 (Fed. Cir. 2016) (“the principle that the same phrase in different claims of the same patent should have the same meaning is a strong one, overcome only if it is clear that the same phrase has different meanings in different claims”).

Nonetheless, this term is indefinite, because it carries the same meaning as when used in the term described in Section II.E above, where it is compared to a “rupture burst pressure.”

G. “specific gravity . . . of the well fluid” (Claims 24 and 52)

Defendant Nine’s Construction	Plaintiff NCS’s Construction
Term is indefinite under 35 U.S.C. § 112	No Construction

This term is indefinite because it presupposes a false concept—that well fluid has a constant specific gravity through the depth of the well. Ex. 1, at ¶39. It is well understood by POSAs that the density, and thus the specific gravity, of well fluid changes with depth due to

changes in pressure and temperature, as admitted by both parties' experts and confirmed by extrinsic evidence in the field. *See* Ex. 3, 111:16-114:1; Ex. 1, at ¶39; *see generally* Nine Br., Ex. 12. Accordingly, the term is indefinite, because it describes a feature that cannot exist.

Even if the term is not indefinite, NCS's proposal to not construe the term should be rejected. NCS expressly expects, indeed invites, expert testimony at trial regarding the meaning of the term "specific gravity of the well fluid." NCS Br., at 15 ("experts can easily explain it to the jury."). But it is the exclusive province of the court – not the experts – to explain to the jury the meaning of claim terms. *Every Penny Counts, Inc. v. Am. Express Co.*, 563 F.3d 1378, 1383 (Fed. Cir. 2009) ("the court's obligation is to ensure that questions of the scope of the patent claims are not left to the jury."). Because NCS has proposed no construction, nor argues for any apparent meaning of the term that accounts for the variation of density with temperature and pressure, Nine respectfully requests that the Court find that this term is indefinite.

H. "disengage the rupture disc from sealing engagement" (Claim 55)

Defendant Nine's Construction	Plaintiff NCS's Construction
disengage the rupture disc from being attached or secured to create a fluid-tight seal	Before rupturing, move the rupture disc relative to the region

NCS's proposed construction should be rejected because the specification does not tie sealing engagement to movement. Instead, Nine's proposed construction should be adopted, as this term does not add anything to the term "sealing engagement" beyond the plain and ordinary meaning of the term "disengage."

1. NCS's Proposed Construction Should Be Rejected

NCS's construction should be rejected because movement alone is neither sufficient nor necessary for a rupture disc to be "disengage[d] . . . from sealing engagement." First, movement alone is not sufficient for the rupture disc to be "disengage[d] . . . from sealing engagement." As

described by NCS, the '445 Patent describes that the rupture disc should not lose its seal with the tubular member in order for the invention to be operable. NCS Br., at 19-20. In other words, NCS argues that the '445 Patent teaches that a rupture disc, when released, acts as a piston in a bore, and maintains its seal with the bore while accelerating. *Id.*; Rodgers Dec., at ¶37. Both parties experts agree that such motion maintains sealing engagement. Ex. 3, at 84:22-85:2; Ex. 1, at ¶41.

Second, movement alone is not sufficient for the rupture disc to be “disengage[d] . . . from sealing engagement.” Instead, a rupture disc could be so disengaged simply by rupturing, which would cause the seal between the upper and lower ends of the tubular member to be un-sealed. Both parties experts also agree on this point. Ex. 3, at 126:4-12; Ex. 1, at ¶41.

Third, there is no support in the intrinsic evidence for construing “disengage” to refer to movement alone. Instead, NCS attempts to use the word “disengage” to import embodiments from the specification into the claim. NCS Br., 16-18. But NCS has not, and cannot, identify anywhere in the specification where the term “disengage” was expressly redefined to recite the features NCS now proposes. Accordingly, NCS’s construction should be rejected.

2. NCS Has Failed to Rebut Nine’s Proposed Construction

NCS’s arguments against Nine’s proposed construction are similarly unavailing. NCS makes three arguments. First, NCS again disputes Nine’s proposed construction for “sealing engagement,” which should be rejected for the same reasons described in Section II.D above.

Second, NCS argues an unreasonable reading of Claim 50 and 55 together that ignores its own construction for “sealing engagement,” and assumes without reason that being in sealing engagement with a “region” precludes movement where the rupture disc is in sealing engagement. However, both parties’ experts agree that sealing engagement can be maintained in motion, and the '445 Patent requires that the seal be maintained. Ex. 3, at 84:22-85:2; Ex. 1, at ¶41.

Third, NCS argues that Nine’s construction excludes embodiments. *See* NCS Br., at 19-20. To the contrary, there is nothing in the construed limitation that excludes the embodiments described in NCS’s Opening Brief. Instead, the “disengagement” occurs either when the rupture disc is shattered by impact with the tubular member, or ruptured by hydraulic pressure alone.

I. “rupture disc is configured to disengage from sealing engagement when exposed to a pressure greater than a hydraulic pressure in the casing string” (Claims 28 and 50)

Defendant Nine’s Construction	Plaintiff NCS’s Construction
Term is indefinite under 35 U.S.C. § 112	the rupture disc, before rupturing, can move relative to the region when exposed to a pressure that is greater than a hydrostatic pressure in the casing string (i.e. a disengaging pressure)

NCS’s proposed construction should be rejected for substantially the same reasons as described in Section II.H above, because NCS’s proposed construction of this term again improperly presupposes that “movement” is both necessary and sufficient to describe disengagement. NCS’s proposed construction should also be rejected because it includes inappropriate commentary from NCS, identifying a new concept of a “disengaging pressure,” which does not appear in the claims, specification, and is not a term generally used in the field of the alleged invention of the ’445 Patent.

However, this claim term is further indefinite because it requires a configuration of the *rupture disc* to provide the described features. Nine Br., Ex. 1, at ¶113. NCS has failed to identify any feature of the rupture disc as satisfying these limitations. *See* NCS Br., at 16-18. Indeed, its proposed construction requires movement following exposure to a certain pressure, but this feature is provided by the *shear ring*, not the rupture disc. *See* Nine Br., Ex. 2, at 8:48-50, 8:67-9:4; Nine Br., Ex. 1, ¶115. Accordingly, this claim limitation is indefinite.

III. CONCLUSION

For the foregoing reasons, Nine respectfully requests that the Court find certain of the foregoing terms indefinite and adopt Nine's proposed constructions.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on the 20th day of November, 2020, a true and correct copy of the foregoing document was served on all counsel of record via the Court's CM/ECF system per Local Rule CV-5(b)(1).

/s/ Hilary L. Preston
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